4 - Service Tools

© 2004 Nokia Corporation.
Company Confidential

This page has been deliberately left blank

 © 2004 Nokia Corporation.

Table of Contents

Page No

JBV-1 docking station and DA-18 adapter 5
SF-21 POS (point of sales) flash adapter 6
SA-29 RF adapter 8
SA-57/59 RF coupler (US region only) 9
MJ-25 module jig 11
RJ-22 soldering jig 13
SS-15 camera rework tool 13
SK-8 LGA rework kit for Kaede (sales package) 14
SK-9 LGA rework kit for MicroPA (sales package) 16
SW security device PKD-1 17
FLS-4S POS (point of sale) flash device (sales pack) 18
FPS-8 FLASH prommer (sales pack) 19
ACF-8 universal power supply 20
XCS-1 service cable 21
XCS-4 modular cable 21
PCS-1 power cable 22
FLC-2 DC cable 22
AXS-4 service cable 23
Printer cable 23
DAU-9S MBUS cable 24
SCB-3 DC cable 24
XRF-1 RF cable 25
JBT-9 Bluetooth test and interface box (sales pack) 26

 © 2004 Nokia Corporation.

This page has been deliberately left blank

© 2004 Nokia Corporation.

JBV-1 docking station and DA-18 adapter

The JBV-1 docking station has been designed for calibration and software update use.

The DA-18 docking station adapter makes signal connections to the phone. JBV-1 and DA-18 are used as one unit.

JBV-1 main electric functions are:

- adjustable VBAT calibration voltage, current measurement limit voltage "VCHAR", current measurement calibration current "ICHAR"
- adjustable ADC calibration voltage via BSI signal
- BSI calibration resistor
- signals from FBUS to the phone via parallel jig
- control via FBUS or USB
- Flash OK/FAIL indication

In calibration mode JBV-1 is powered by external power supply 11-16V DC. In flashing, power for the phone can be taken from FPS-8 or external power supply 11-16V DC.

Product code

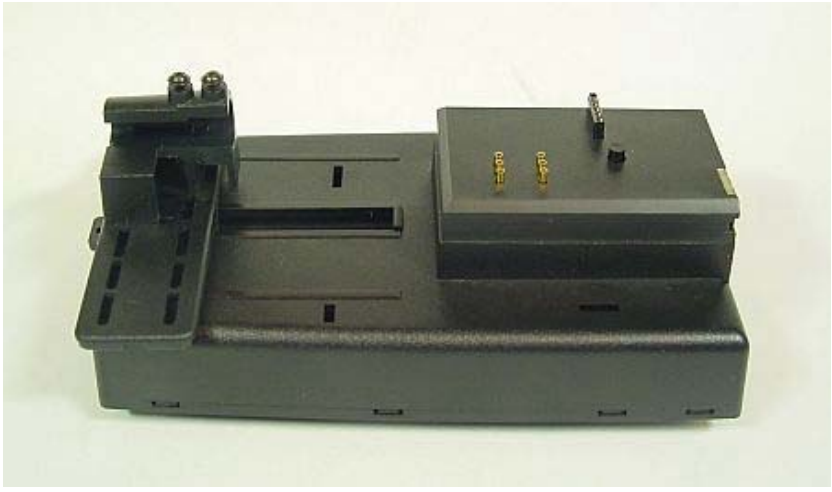
JBV-1 docking station: 0770298

DA-18 docking station adapter: 0770682

Spare parts for DA-18

Test pin (SC-0-J-3.2-DG): 0770617 (10pcs/bag)

View of DA-18



© 2004 Nokia Corporation.

SF-21 POS (point of sales) flash adapter

The POS flash adapter SF-21 is used in the place of phone's normal battery during service to supply a controlled operating voltage and to connect to flash pads.

Product code

SF-21 POS flash adapter: 0770685

Spare parts for SF-21

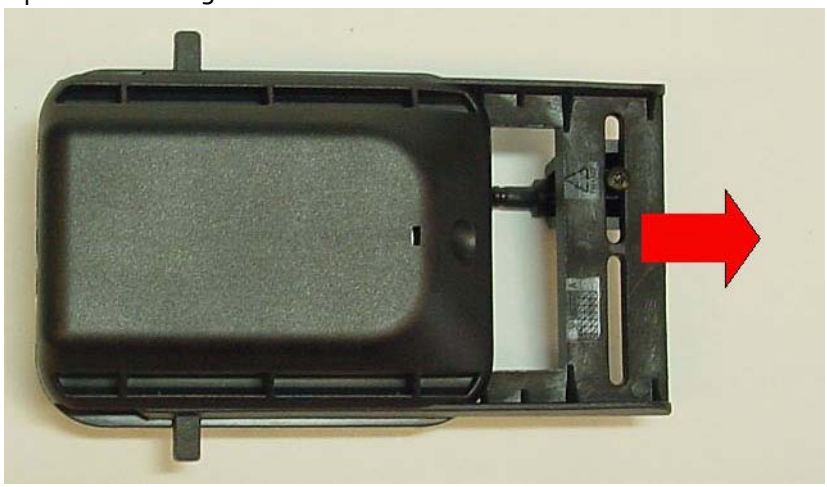
Test pin module: 0780357

Test pins: 0770754 (APAC/China only, soldering required)

View of SF-21

Operations:

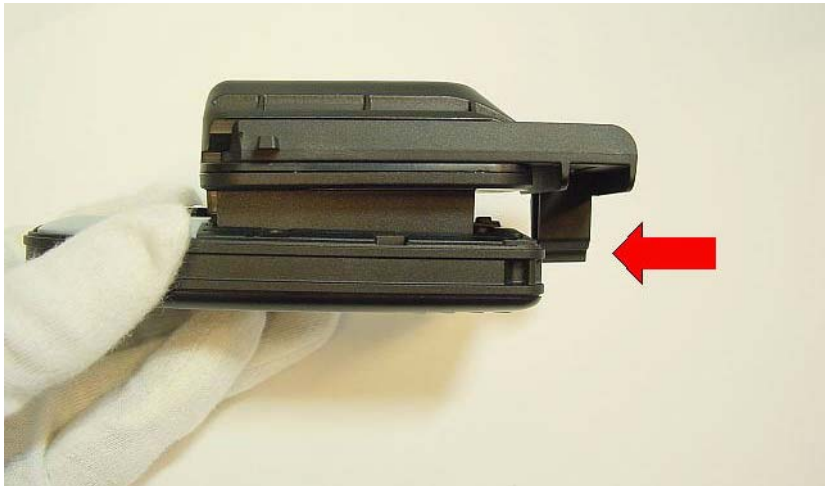
1 Open the locking slide.



 © 2004 Nokia Corporation.

2 Insert the adapter to the phone from battery connector side.

3 Lock the adapter with DC jack.



© 2004 Nokia Corporation.

SA-29 RF adapter

SA-29 RF adapter is used for RF measurement.

A-cover and antenna module need to be removed to attach SA-29.

Product code

SA-29 RF support adapter: 0770686

View of SA-29

RF attenuations

GSM850: 0.0 - 0.1

EGSM900: 00 - 0.0

DCS1800: 0.4 - 0.5

PCS1900: 0.4 - 0.5

 © 2004 Nokia Corporation.

SA-57/59 RF coupler (US region only)

SA-57/59 RF coupler is used for RF testing with DA-18 Docking station adapter.

These couplers are intended only for pre-testing in US.

- SA-57 for RH-51, RH-67 (GSM 850/1800/1900)
- SA-59 for RH-52, RH-68 (GSM 900/1800/1900)

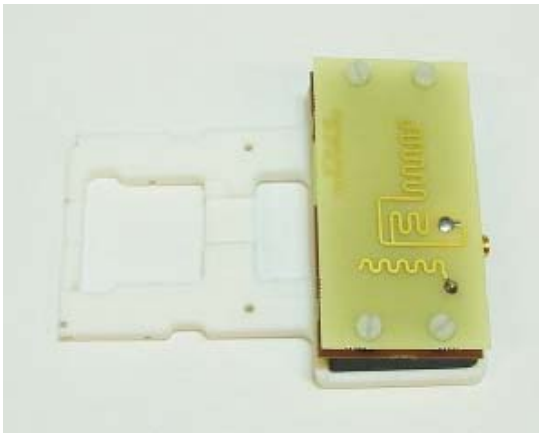
Note: Tuning with SA-57/59 is not allowed.

Product Code

SA-57 RF coupler: 0780345

SA-59 RF coupler: 0780362

View of SA-57/59



RF attenuation

System	Channel	SA-57		SA-59	
		Tx (dB)	Rx (dB)	Tx (dB)	Rx (dB)
GSM 850	128	5.6	4	-	-
	190	4.5	5	-	-
	251	3.7	6	-	-
EGSM 900	975	-	-	4.8	6
	38	-	-	4.9	7
	124	-	-	5.5	8

© 2004 Nokia Corporation.

GSM 1800	512	4.5	5	5.7	6
	700	3.6	5	5.4	7
	885	3.5	5	5.8	7
GSM 1900	512	4.0	4	6.8	6
	661	3.3	4	6.2	6
	810	3.0	4	5.7	8

 © 2004 Nokia Corporation.

MJ-25 module jig

The MJ-25 module jig is used for testing the following modules:

- User interface
- Baseband and RF on system module

Product code

MJ-25 module jig: 0770683

Spare parts for MJ-25

Spare part module (LCD-UIB PWB): 0780356

Spare part module (KeyPad-UIB PWB): 0780355

Test pins: 0770879

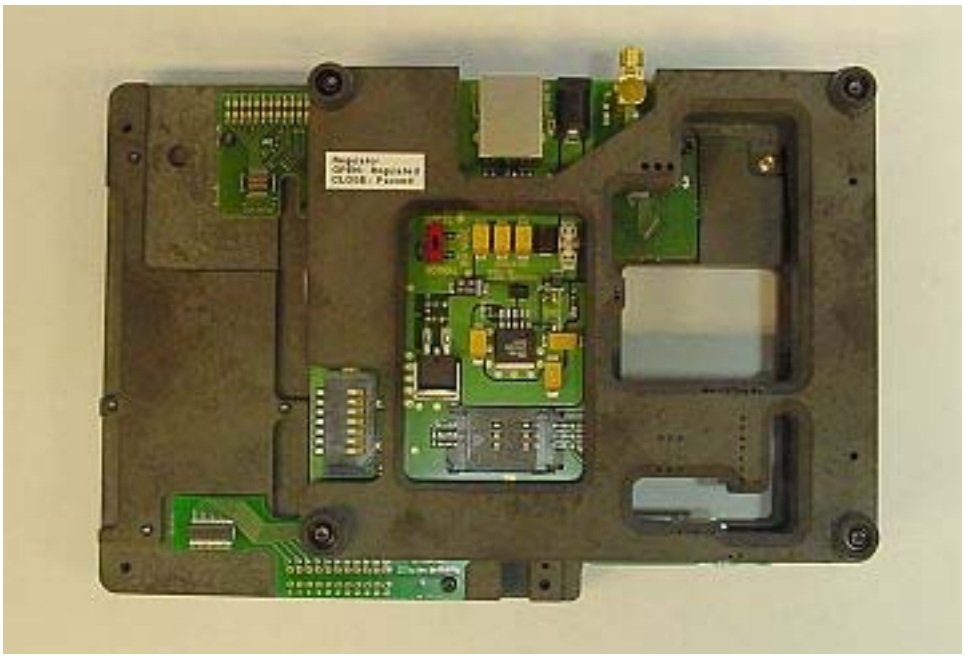
Test pins (RF pogo): 077876

Fuse and protector: 0770622

Optional parts for MJ-25 (not included in MJ-25 sales pack)

SA-58 RF coupler (BT coupler): 0780354

View of MJ-25



Note:
The nominal supply voltage for MJ-25 is +6.0 V.

© 2004 Nokia Corporation.

The supply voltage must not exceed +12.0 V (min. 5.0 V).
Supply the power to jig only when the jumper is open = regulated.

Table 1: LCD test pin list

Pin	Signal name	Pin	Signal name
1	GND	13	LED out
2	!WR	14	GND
3	GND	15	!CS
4	D0	16	D/!C
5	D1	17	GND
6	D2	18	D7
7	D3	19	D6
8	GND	20	D5
9	Vddi	21	D4
10	Vdd	22	TE
11	GND	23	!RD
12	LED in	24	!RES

Table 2: KEYPAD test pin list

Pin	Signal name	Pin	Signal name
1	ROCKER2	12	COL5
2	ROCKER3	13	COL4
3	ROCKER4	14	ROW3
4	GND	15	ROCKER1
5	ROW0	16	GND
6	GND	17	GND
7	VKEYB	18	ROW1
8	COL2	19	COL3
9	ROW4	20	ROW2
10	COL1	21	ROW5
11	ROCKER5	22	COL0

 © 2004 Nokia Corporation.

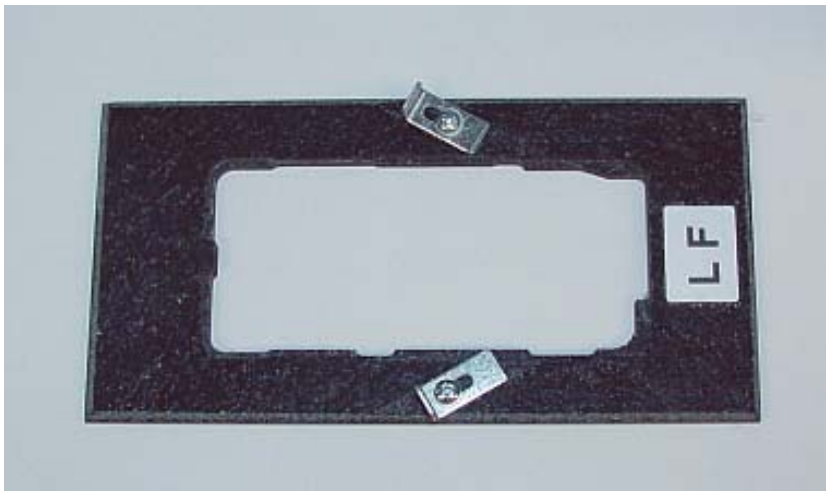
RJ-22 soldering jig

The soldering jig RJ-22 is used for soldering and as a rework jig for system module. It is made of lead free rework compatible material.

Product code

RJ-22 soldering jig: 0770684

View of RJ-22



SS-15 camera rework tool

The camera rework tool SS-15 is used to remove/attach the camera module (NMP code: 4858045) from/to the socket on the phone PWB.

The same concept as SRT-9 for 4858009 but not compatible

- SS-15 cannot be used for 4858009
- SRT-9 cannot be used for 4858045

Product code

SS-15 camera rework tool: 0770755

View of SS-15

© 2004 Nokia Corporation.

SK-8 LGA rework kit for Kaede (sales package)

SK-8 is used to print solder paste on Kaede USB component (NMP code: 4342163) when the component is reworked.

SK-8 consists of ST-9 Stencil and RJ-29 rework jig.

Sales package includes:

ST-9 stencil: 0770727

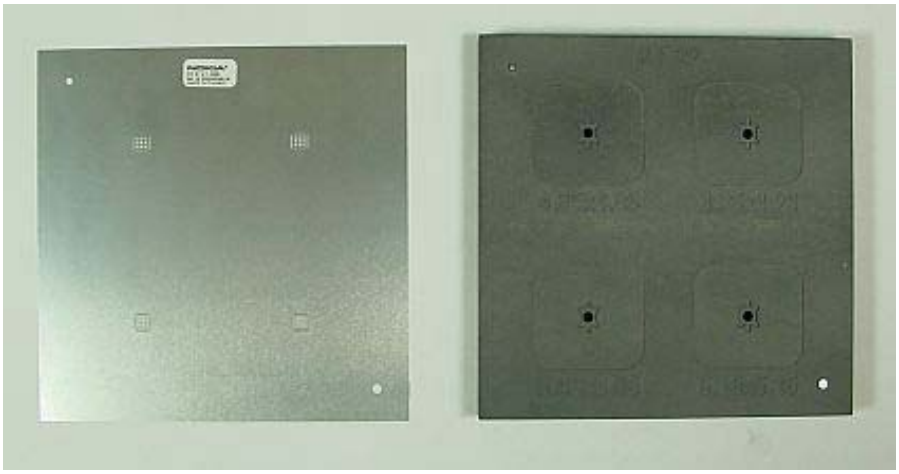
RJ-29 rework jig: 0770728

Product code

SK-8 LGA rework kit for Kaede sales package: 0274550

View of SK-8

(left ST-9, right RJ-29)

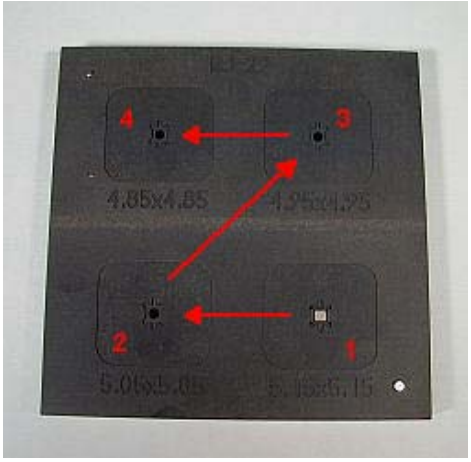


Rework procedure

Due to the large mechanical tolerance of the component, the following procedure is necessary:

1 Put the component into the rework jig. The component should be placed in the best fit location which is determined by placing the component in the largest location first, and if this is too large, re-position it to the next location. This should be carried out until the best fit location is found.

 © 2004 Nokia Corporation.



2 Once the best fit location has been found, leave the component there and put the stencil on top of the jig and the component.

3 Put soldering paste on the component properly.

4 Remove the stencil and the component from the jig.

5 Start the soldering process.

© 2004 Nokia Corporation.

SK-9 LGA rework kit for MicroPA (sales package)

SK-9 is used to print solder paste on mircoPA component (NMP code: 4355641) when the component is reworked.

SK-9 consists of ST-13 stencil and RJ-21 rework jig.

Sales package includes:

ST-13 stencil: 0770848

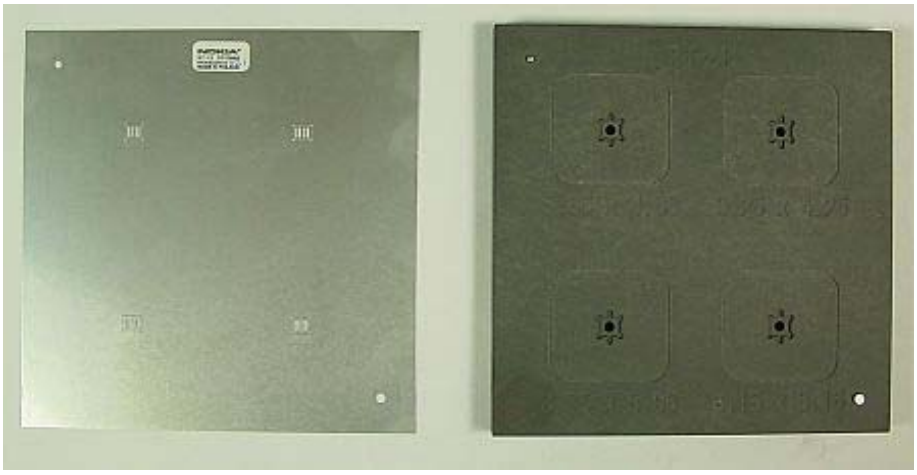
RJ-21 rework jig: 0770849

Product code

SK-9 LGA rework kit for microPA sales package: 0274819

View of SK-9

(left ST-13, right RJ-21)



Rework procedure

Refer to SK-8.

© 2004 Nokia Corporation.

SW security device PKD-1

SW security device is a piece of hardware enabling the use of the service software when connected to the parallel (LPT) port of the PC. Without the dongle present it is not possible to use the service software. Printer or any such device can be connected to the PC through the dongle if needed.

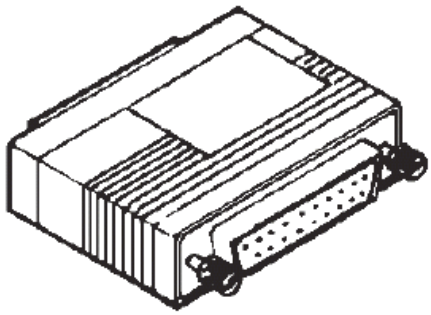
Caution: Make sure that you have switched off the PC and the printer before making connections!

Caution: Do not connect the PKD-1 to the serial port.

Product code

SW security device PKD-1: 0750018

View of PKD-1



© 2004 Nokia Corporation.

FLS-4S POS (point of sale) flash device (sales pack)

FLS-4S is a dongle and flash device incorporated into one package, developed specifically for POS use.

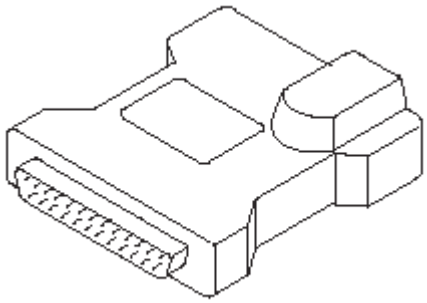
Product code

FLS-4S sales pack – Europe/Africa: 0080541

FLS-4S sales pack – APAC: 0080542

FLS-4S sales pack – Americas: 0080543

View of FLS-4S



© 2004 Nokia Corporation.

FPS-8 FLASH prommer (sales pack)

The FLASH prommer FPS-8 is used for example with SF-21, DA-18 and JBV-1. Power is supplied to FPS-8 from the Universal Power Supply.

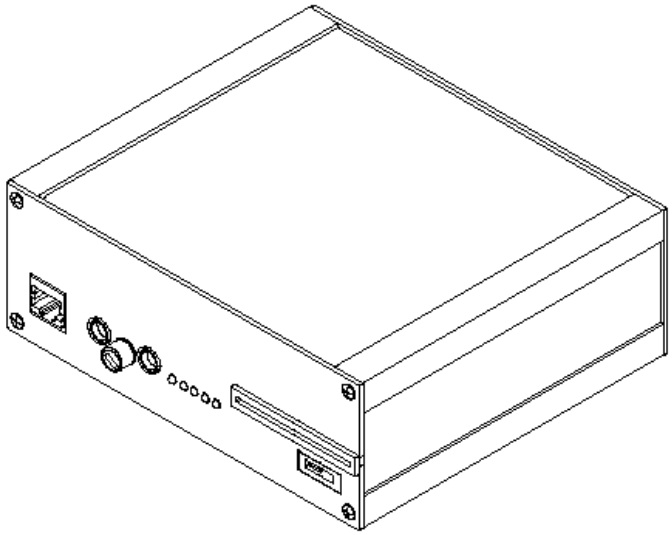
The sales pack includes:

- FPS-8 flash prommer (0750123)
- FPS-8 activation sheet (9359289)
- ACF-8 universal power supply (0680032)
- AXS-4 service cable (D9-D9) (0730090)
- Printer cable (0730029)

Sales package code

FPS-8 flash prommer: 0080321

View of FPS-8



© 2004 Nokia Corporation.

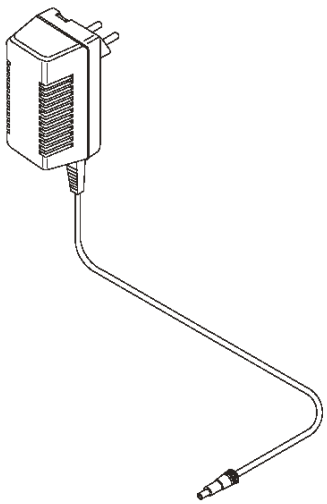
ACF-8 universal power supply

ACF-8 universal power supply is used to power FPS-8. ACF-8 has 6V DC and 2.1A output.

Product code

ACF-8 universal power supply: 0680032

View of ACF-8



© 2004 Nokia Corporation.

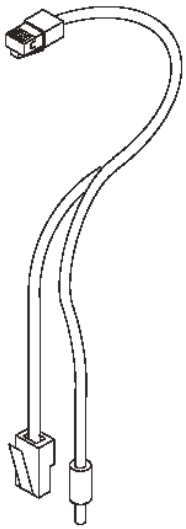
XCS-1 service cable

The XCS-1 service cable is used to connect FLS-4S to SF-21 for supplying a controlled operating voltage and data connection.

Product code

XCS-1 service cable: 0730218

View of XCS-1



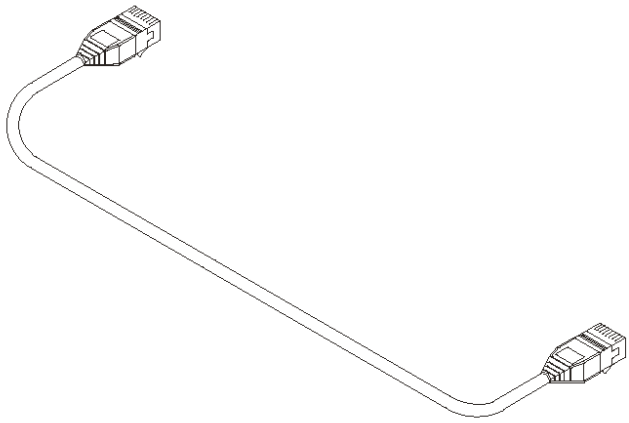
XCS-4 modular cable

XCS-4 is a shielded (one specially shielded conductor) modular cable for flashing and service purposes.

Product code

XCS-4 Modular cable: 0730178

View of XCS-4



© 2004 Nokia Corporation.

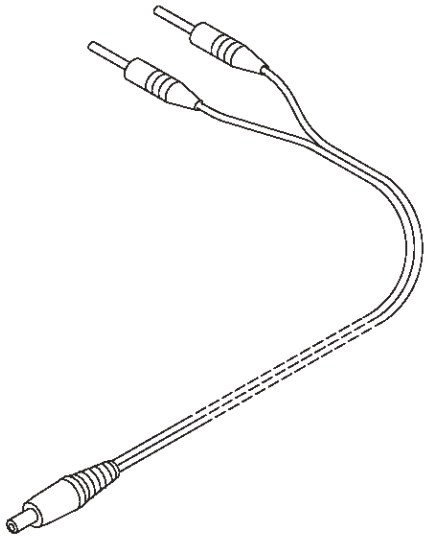
PCS-1 power cable

The PCS-1 power cable (DC) is used with JBV-1 or MJ-25 to supply a controlled operating voltage.

Product code

PCS-1 power cable: 0730012

View of PCS-1



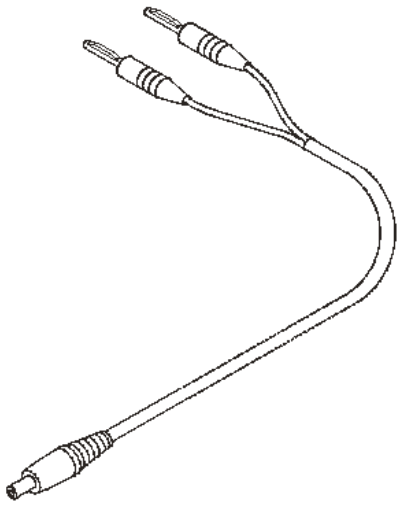
FLC-2 DC cable

FLC-2 is used with SF-21 to supply a controlled operating voltage.

Product code

FLC-2 DC cable: 0730185

View of FLC-2



© 2004 Nokia Corporation.

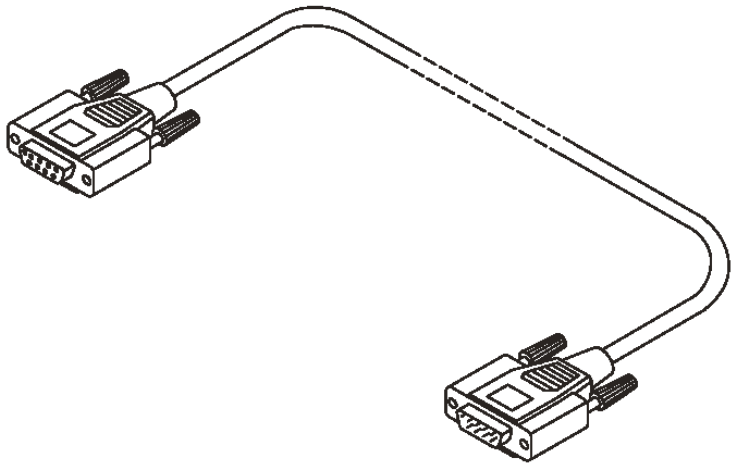
AXS-4 service cable

The AXS-4 D9-D9 service cable is used to connect two 9 pin D connectors for example between PC and FPS-8. Cable length is 2 meters.

Product code

AXS-4 D9-D9 service cable: 0730090

View of AXS-4



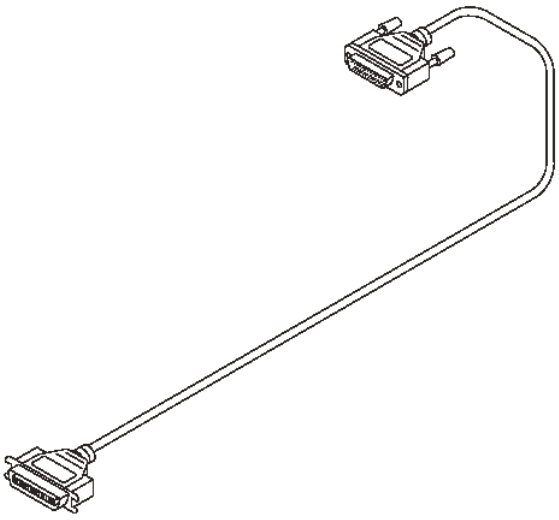
Printer cable

This cable is used to connect the PC to FPS-8.

Product code

Printer cable: 0730029

View of printer cable



© 2004 Nokia Corporation.

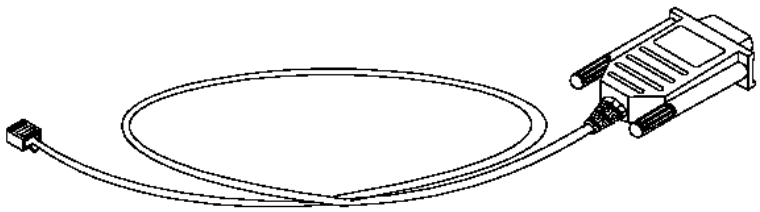
DAU-9S MBUS cable

The MBUS cable DAU-9S has a modular connector and is used for example between the PC`s serial port and module jig MJ-25, SF-21 or JBV-1.

Product code

DAU-9S MBUS cable: 0730108

View of DAU-9S



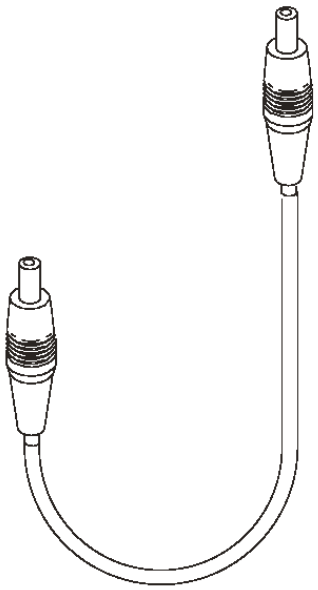
SCB-3 DC cable

The DC cable SCB-3 is used to connect JBV-1 to the phone charger jack for ADC/VCHAR/ ICHAR calibration.

Product code

SCB-3 DC cable: 0730114

View of SCB-3



© 2004 Nokia Corporation.

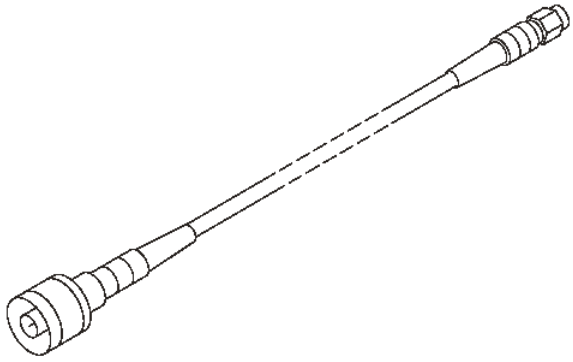
XRF-1 RF cable

The XRF-1 RF cable is used to connect for MJ-25 or SA-29 to RF measurement equipment.

Product code

XRF-1 RF cable: 0730085

View of XRF-1



© 2004 Nokia Corporation.

JBT-9 Bluetooth test and interface box (sales pack)

The JBT-9 testbox is a generic device to perform Bluetooth bit error rate testing and doing cordless FBUS connection via Bluetooth. An ACP-8x charger is needed for BER testing and AXS-4 cable in case of cordless testing interface usage.

Sales package includes:

- JBT-9 testbox (0770336)
- Installation and warranty information (9360613)

Product code

JBT-9 sales kit: 0081490

View of JBT-9 with antenna

 © 2004 Nokia Corporation.